Space Weather Forecast

Issued on Monday, 09 May 2022 at 13:29 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Chance of Minor Geomagnetic Storm G1 later in UTC day of Tuesday. Chance of Moderate-class X-ray flares and R1/R2 radio blackouts.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been, with isolated Common-class flares. The largest of these flares was from a region on the southeastern limb, currently designated as three spots. No Earth-bound ejecta is expected. There are currently seven sunspots on the visible disc. The three spots in the western hemisphere are simplifying as they approach the western limb and are becoming increasingly hard to analyse. In the eastern hemisphere, the spot approaching the central meridian retained its delta complexity and grew. The spot groups close to the southeast limb appear have one mature feature and two NEW regions, a complex Dai and a Bxo. The magnetic complexity of both spot groups remains difficult to analyse at present due to foreshortening. There remain many long chain filaments at present on the disk.

Solar Wind / Geomagnetic Activity: The solar wind followed a slow regime. The interplanetary magnetic field was weak yet a little erratic. Resulting geomagnetic activity was mainly Quiet, but with a single peak Kp of 3 recorded at the 03-06UTC interval on 9th May.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to be low to moderate, as although some of the more potent recent spots are quietening down and/or rotating off the facing side of the sun, newly-arrived active regions in the southeast are bolstering the risk to a degree.

Solar Wind / Geomagnetic Activity: A CME spawned by a 'disappearing filament' 06/1900UTC may give Minor Geomagnetic Storm G1 intervals later Tuesday 10 May and on into Wednesday (UTC days). No significant 'coronal holes' feature in this forecast - in any case, the sole small feature will likely be coincident with the aforementioned CME and its effect therefore masked. Geomagnetic activity should otherwise be quiet to start and end the four-day period in the prevailing slow solar wind regime, probably most reliably so on Monday 09 May.

Energetic Particles / Solar Radiation: No solar radiation storms are expected, with a daily Slight Chance of S1 largely the result of one of the largest sunspot's position near the better-connecting (with Earth should it produce a proton-rich flare) western solar horizon.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2022. All Rights Reserved.

Met Office

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	30	20	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	30	20	20	20
Very Active	R3 to R5 X	No	5	3	3	3

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	5	5	2
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2022. All Rights Reserved.